

**PROTOCOL FOR MONITORING PERSISTENCE AND MOVEMENT IN SOIL  
OF NEMATICIDES REGISTERED FOR USE ON FLOWER BULBS**

**I. INTRODUCTION**

The production of high quality flower bulbs in areas of Del Norte and Humboldt counties is dependent upon the availability of pesticides that can protect the bulbs from nematode damage. However, the combination of coarse soils, high rainfall and high water tables present in the region also creates conditions that favor contamination of groundwater by soil applied chemicals. For example, aldicarb and 1,2-dichloropropane are no longer used because they were found in groundwater.

**II. OBJECTIVE**

To determine the persistence and downward movement of Thimet (Phorate) insecticide-nematicide in soils of Del Norte and Humboldt counties flower bulb production areas.

**III. MONITORING PLAN**

Two test sites will be selected, one in each county. The sites will be on fields that have been used for flower bulb production but are now in pasture as a rotation crop and receive irrigation on a regular schedule. Permission will be obtained to use the selected sites for a complete year.

A plot for each chemical to be tested will be marked off in an area 10 feet long by 5 feet wide. Soil will be formed into a raised bed lengthwise in the center of the plot. The bed will be 2 feet wide at the base, 8 inches high and 16 inches wide at the top. The test chemical will be applied in a band at the label rate to an area 1 foot wide in a 4 inch deep furrow in the center of the bed. The treated band will be covered with 4 inches of soil.

Soil samples will be collected with a bucket auger at 6 inch intervals. One core will be taken to a depth of 8 feet from each test site before the pesticides are

applied. These samples will be analyzed for organic matter content, pH, and texture. Records will be kept of rainfall and irrigation water that is applied to the plots throughout the study.

After application, two cores will be taken from each plot as follows and analyzed for the pesticide:

					<u>Total Samples per Pesticide</u>
At treatment	2 foot cores	=	8 samples x 2 sites	=	16
1 month post	3 foot cores	=	12 samples X 2 sites	=	24
2 month post	5 foot cores	=	20 samples X 2 sites	=	40
12 month post	8 foot cores	=	36 samples X 2 sites	=	<u>64</u>
					144

#### IV. BUDGET

Chemical Analyses	144 samples @ \$110.....	\$ 15,840
Quality Control Samples (10%).....		1,584
Supplies and Field Expenses.....		200
Personnel Costs.....		<u>1,500</u>
	TOTAL COST	\$ 19,124